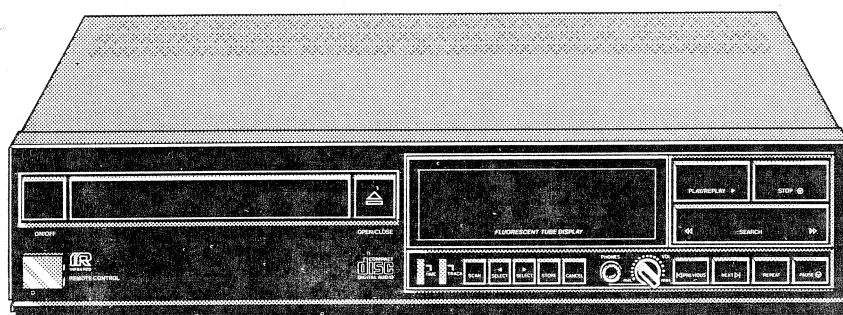




CONSUMER ELECTRONICS

PHILIPS



## *CD 304 MK II*

|    |                            |
|----|----------------------------|
| GB | Compact Disc Player        |
| F  | Lecteur 'Compact Disc'     |
| D  | Compact-Disc-Spieler       |
| NL | Compact Disc-Speler        |
| E  | Reproductor 'Compact Disc' |
| I  | Lettore Compact Disc       |
| N  | Compact Disc Spiller       |
| DK | Compact Disc-Afspiller     |
| S  | Compact Disc-Spelaren      |
| SF | Compact Disc -Soitin       |

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**CLASS 1**  
**LASER PRODUCT**

# English

## INTRODUCTION

Welcome to the new sound experience of Compact Disc Digital Audio.

Compact Disc is the biggest advance ever made in audio technology. By employing the most sophisticated digital and optical technologies, Compact Disc not only produces the ultimate in sound reproduction, it gives you the user, access to operating features which have never been seen before in audio equipment designed for the home, such as fast access to any track on the disc and very simple programming facilities.

A great deal of attention has also been given to the ease-of-operation of this Compact Disc player: as soon as it is switched on and the disc is inserted, you can control it using the remote control handset supplied.

In these instructions you will find everything you need to know about installing, operating and programming your Compact Disc player. Read through the text carefully and you will quickly become familiar with all the facilities offered by this new way of listening to discs.

## INSTALLATION

### Inserting the Batteries in the Remote Control Handset (Fig. 1-2)

The remote control handset runs on four R03, UM4 or AAA 1.5 Volt batteries.

Slide open the cover at the rear of the remote control handset and insert the batteries as shown in the diagram in the battery compartment. Then slide the cover closed again.

The life of a set of batteries is normally about one year. Remove the batteries as soon as they are flat or if you are not going to use the remote control handset for any length of time, in order to prevent damage to the remote control handset by possible battery leakage.

### Checking the Power Supply

The type plate, at the rear of your Compact Disc player, tells you the supply voltage for which the player is set. If your mains supply voltage is different, or becomes different in the future, get your dealer - or our Service Organisation - to change the voltage setting for you.

*U.K. only:* If your player is not fitted with a mains plug, refer to 'Fitting a Mains Plug' under 'ADDITIONAL INFORMATION'.

### Taking Out the Transit Screws (Fig. 3)

On the bottom of the player you will see two screws, fitted in red collars and indicated by an arrow. These lock the player mechanism to protect it during transportation. Remove these screws and collars and keep them in a safe place. Always refit them if the player is to be transported.

### Siting the Player

This Compact Disc player can equally well be sited free-standing, as in an audio rack, or stacked with other components. Never stand the player in persistent direct sunlight or near any heat source.

*a. Free-standing* - If sited free-standing, the player must always stand horizontally on a flat, firm surface, not on a mat or anything similar.

If siting the player in a cupboard or a wall unit, always allow a minimum space of 3 cm above the player so as not to interfere with the cooling of the player.

*b. In an audio-rack* - In an audio-rack the player can be sited in any position.

*c. Stacked* - In composing your own system, you should preferably site the player at the bottom or on the top. Under no circumstances stand the player directly upon a high-power amplifier, because such an amplifier gives off a substantial amount of heat.

*Warning* - Do not place audio or video cassettes on the player because of the effects of the magnetic fields produced by the player transformer.

### Connections (Fig. 4)

At the back of the player you will find the connection sockets for the connection cable (a) and digital equipment (b).

*a. Connection to the (Pre-)Amplifier* - Insert a black plug of the supplied connection cable in the black socket (left channel) and a red plug into the red socket (right channel). Insert both other plugs into the corresponding CD/TV or AUX sockets on your (pre-)amplifier.

If these sockets are already in use, you can plug in to the TUNER or TAPE IN sockets, but *never* the PHONO sockets! The PHONO sockets are not suitable for the connection of a Compact Disc player.

*b. Connection of Digital Equipment* - This socket makes the player suitable for future Compact Disc applications such as CD-ROM and digital sound processing.

## OPERATION (Fig. 5)

Your Compact Disc player is now ready for use. Before attempting to operate it, you are recommended to familiarise yourself with the functions of the controls etc. on the player and remote control handset as described briefly below. The names used here for the controls etc. will be used throughout the text.

- 1 ON/OFF key: for switching the player on and off.
- 2 OPEN/CLOSE key: for opening and closing the disc tray.
- 3 FLUORESCENT TUBE DISPLAY: functions as on/off indicator; gives information about the number of tracks on the disc, the playing time, the progress of play and particular functions of the player, and signals faults during operation or programming. See also: 'The Display'.
- 4 PLAY/REPLAY key: for starting play (PLAY) and returning to the beginning of a track (REPLAY).
- 5 STOP key: for stopping play during playback and for erasing a programme.
- 6 << SEARCH >> key: for fast search to a particular passage.
- 7 REMOTE CONTROL eye: for receiving infra-red signals from the remote control handset.
- 8 TIME key: for displaying the total playing time of the disc, or the elapsed playing time of the complete disc, or of each track individually.
- 9 TRACK key: for displaying the track indicator with index numbers (where applicable) numerically.
- 10 SCAN key: for automatically playing the beginning of each track on the disc.
- 11 SELECT keys: for searching for the track you want to begin with, and selecting tracks when compiling a programme >| from low to high and <| from high to low).
- 12 STORE key: for storing tracks when compiling a programme.
- 13 CANCEL key: for cancelling mistakes when compiling a programme.
- 14 PHONES socket: for the connection of a headphone to listen to discs without using an amplifier. See also: 'Listening with a headphone' under 'ADDITIONAL INFORMATION'.

**15 VOL.** control: for adjusting the volume when listening with a headphone.

**16 K PREVIOUS** key: for returning to a previous track during play.

**17 NEXT** key: for moving on to a following track during play.

**18 REPEAT** key: for repeating a disc or a programme.

**19 PAUSE** key: for holding play at the start of a track or passage, or interrupting play.

### The Display (Fig. 6-17)

Because of the diversity of indications the display can show, they are described separately here below.

**On/off indication** - As soon as the player is switched on, the track indicator on the right of the display lights. This comprises 20 numbered vertical bars. The track indicator goes off again when the player is switched off.

**Stand-by indication** - The moment the disc tray closes, '00' appears on the left of the display to show that the player is reading the contents list on the disc. Until this has been done this indication remains lit.

**Number of Tracks indication** - After the contents list has been read, the number of bars remaining lit on the track indicator corresponds to the number of tracks on the disc, e.g. 14 for a disc with 14 tracks. When the first track begins to play, the first bar glows brighter.

**Relative-time indication** - When the disc tray is closed using the PLAY/REPLAY or SCAN key, the pause before each track is counted off above the TIME REL sign in seconds, e.g. 'P.02' - 'P.01' - 'P.00'. Immediately afterwards the display of elapsed playing time for the individual track begins, in minutes and seconds, with '00.00' - '00.01' - '00.02' etc.

**Total-time indication** - If you want to know the total playing time of a disc, you close the tray with the OPEN/CLOSE key or, after play has begun, you press the TIME key once. The total playing time then appears above the TIME TOT sign in minutes and seconds, e.g. '59.17'. This number remains unchanged while the disc is in play.

**Absolute-time indication** - If you want to know the elapsed playing time of all tracks including the intermediate pauses, you press the TIME key twice in succession after play has begun. The sign TIME ABS then appears under the advancing minutes and seconds. To switch back to the relative-time indication, press the TIME key a third time.

**Numerical Track indication** - If you prefer to see the various tracks on the disc shown numerically as well, you press the TRACK key after play has begun. The TRACK sign lights and instead of the time indication, you read '01.01', '02.01' etc. The figures after the point denote index numbers and remain at '01' if the disc has no index numbers. Track indication in figures cannot be used when programming with SELECT.

**Index numbers** - If the disc has index numbers - see the contents list in the disc holder - you always have to press the TRACK key to display them. They appear after the point on the numerical track indication, e.g. '01.01', '01.02' etc. Index numbers cannot be programmed, but are a useful aid when searching for a particular passage. If you want to return to time indication during play, you press the TIME key again.

**ERROR indication** - If you make a mistake when operating or programming, the red ERROR sign lights for a short time as a warning.

**ERROR DISC indication** - If the fault has to do with the disc, you will see the red ERROR DISC sign light briefly.

**Other indications** - Pressing the SCAN, PAUSE and REPEAT keys causes the corresponding signs at the lower right of the display to light.

**Discs with more than 20 Tracks** - These discs can be played quite normally on this Compact Disc player although you should take one or two points into consideration. These concern the working of the track indicator, the player functions and programming. The track indicator works normally for the first 20 tracks, i.e. after the contents list has been read, all 20 bars will light. As play progresses, these go off successively except the twentieth, which remains lit at a lower intensity when the twentieth track ends. At the same time the ERROR sign lights continuously to show that there is still a number of tracks to follow. The actual number, however, is no longer indicated by a corresponding number of bars on the track indicator. Play of the remaining tracks is still indicated in the normal way by the corresponding bar glowing brighter, so that you can see from this which of the tracks beyond the twentieth is being played. You can, of course, press the TRACK key to display the tracks numerically; this indicator goes on counting beyond 20.

All player functions will remain operative during the complete duration of the disc, with the exception of 'beginning at any specific track' and reviewing the disc and selecting tracks using SCAN. You can only apply these to the first 20 tracks. The programming facility using SELECT is also limited to the first 20 tracks, the remainder cannot be stored in the memory.

### On and Off switching (ON/OFF)

**Switching on** - You switch the player on by pressing the ON/OFF key. The track indicator lights up.

**Switching off** - When you press the ON/OFF key again, the player is switched off. The track indicator goes off.

### Loading and Unloading a Disc (OPEN/CLOSE)

**Loading (Fig. 18-20)** - You open the disc tray by pressing the OPEN/CLOSE key. The tray slides out automatically after about 1 second. Take care that the tray is not obstructed, otherwise it will stop after about 3 seconds. Should this happen, you should press the key twice in succession to bring the tray fully out. With your hand open, and thumb and fingers extended, take the disc out of its holder and fit it, *label side up*, into the cradle in the disc tray.

You close the tray by pressing the PLAY/REPLAY, SCAN or OPEN/CLOSE key. You use PLAY/REPLAY if you want to play the complete disc directly, SCAN if you first want to review the disc or choose tracks from it, and OPEN/CLOSE if you want to begin play with a particular track or if you first want to programme the disc. In every case, the tray slides in automatically. Take care again that the tray is not obstructed as it closes. Should this happen, the tray will slide out again after about 3 seconds. If the ERROR DISC sign lights after the tray is closed, it means that you have either loaded the disc upside-down, or forgotten to load the disc at all.

**Unloading** - You open the disc tray by pressing the OPEN/CLOSE key. When unloading, hold the disc in the same way as when loading to avoid fingerprints.

Use the OPEN/CLOSE key to close the tray when it is empty. The ERROR DISC sign will light in consequence, but in this case, of course, does not indicate an operating error.

To prevent the ingress of dust, do not leave the tray open. Avoid opening the tray during play, unless you mean to stop the disc.

## Using the Remote Control Handset (REMOTE CONTROL)

When the player is switched on and the disc is in place, all the functions of the player can also be operated using the remote control handset, except changeover of the time indication and opening the disc tray.

The remote control handset works up to a distance of about 8 metres. Although the player can receive the infra-red beam also via reflection, you are recommended to aim the remote control handset directly at the REMOTE CONTROL eye as far as possible, because the power of the infra-red beam decreases as the batteries become drained.

## Playing the Complete Disc (PLAY/REPLAY)

If you simply want to play the whole disc, close the tray by pressing the PLAY/REPLAY key. After the contents list on the disc has been read, the number of bars lit on the track indicator corresponds to the number of tracks on the disc, the pause between the contents list and the first track is counted off. Immediately afterwards, the first bar of the track indicator glows brighter and the first track begins to play; at the same time, the display of elapsed playing time on this track begins.

Each time a track ends, the corresponding bar of the track indicator goes off and the next bar glows brighter. Meanwhile, the pause is again counted off, followed once more by the display of the elapsed playing time on the track.

As soon as all the tracks have been played, the disc stops and all the bars of the track indicator relight, while all the indicators go off.

## Reviewing the Disc (SCAN)

If you first want to get an impression of the character of a disc, you close the tray by pressing the SCAN key. After the contents list on the disc has been read, the SCAN sign lights and you hear the first ten seconds of each track. The track you are listening to is shown by the flashing bar on the track indicator, while the bars corresponding to the tracks already scanned go off in turn.

When the beginnings of all tracks have been played, the SCAN sign goes off, and the laser pick-up returns to the beginning of the first track and the corresponding bar on the track indicator glows brighter. At the same time play is automatically interrupted and the PAUSE sign lights.

If you decide to listen to the disc, you start play by pressing the PAUSE key. The PAUSE sign goes off.

If, before you have heard all the tracks, you decide that you want to hear the rest of the disc, you press the PLAY/REPLAY key. The SCAN sign goes off and the remaining tracks are now played in their entirety, beginning with the track whose bar was flashing.

## Selecting and Storing Tracks (SCAN and STORE)

You can also use the SCAN method to select and store, while reviewing, the tracks you would like to hear later. Each time you find such a track, you press the STORE key during the time it is playing; the corresponding bar on the track indicator then lights continuously. The first time you press the STORE key, all the remaining track indicator bars go off, after the one for the next track, to reappear, one for one, after each new selection.

You can always leave a track that you do not want to store to play out, but to speed up selection, you can press the CANCEL key straight away. In both cases the corresponding track indicator bar goes off so that in the end, from the continuously lit bars, you have a visual indication of the tracks you have stored. Once again, you start play by pressing the PAUSE key.

## Going back to the Beginning of a Track (PLAY/REPLAY)

If you want to go back to the beginning of a track while it is playing, you press PLAY/REPLAY. The track is then played from the beginning again.

## Going on to a Following Track (NEXT ▷)

If, while playing a particular track, you decide to go on to a later track, you press the NEXT ▷ key successively until the track indicator bar corresponding to the desired track glows brighter. Play is then temporarily interrupted until the laser pick-up reaches the beginning of this track.

If you press the NEXT ▷ key during the last track, the ERROR sign will light, reminding you that there is no next track, and play of the last track will continue. If the player is in the repeat mode, the ERROR sign will not light, and play will continue with the first track.

## Going back to a Previous Track (◀ PREVIOUS)

If, while playing a particular track, you decide to go back to a previous track, you press the ◀ PREVIOUS key successively until the track indicator bar corresponding to the desired track glows brighter. Play is then temporarily interrupted until the laser pick-up reaches the beginning of this track.

If you press the ◀ PREVIOUS key during the first track, the ERROR sign will light, reminding you that there is no previous track, and play of the first track will continue. If the player is in the repeat mode, the ERROR sign will not light, and play will continue with the last track.

## Beginning at any Specific Track (◀ SELECT ▷ and PLAY/REPLAY)

If you want to start play with a track other than the first, use the OPEN/CLOSE key to close the tray. This way you avoid erroneous selection of a track higher than the highest track number on the disc, in which situation the disc will stop when you press PLAY/REPLAY.

After the contents list on the disc has been read, the total playing time of the disc, e.g. '59.17', appears above the TIME TOT sign, and the number of bars remaining lit on the track indicator corresponds to the number of tracks on the disc. The highest track number that can be selected is now determined and mistakes in this respect are therefore excluded.

You now register the required track on the track indicator. Depending on which is quicker, hold down either the SELECT ▷ key or the ◀ SELECT key until the required bar flashes. If you go past the required bar, you can return to it using the other SELECT key.

You start play by pressing the PLAY/REPLAY key. This must be done within 7 seconds after the selected bar has started to flash, otherwise the microprocessor in the player will assume that you have changed your mind and the bar will be lit continuously again; play will then begin with the first track. As long as you have not pressed the PLAY/REPLAY key, however, you can re-activate the required track using the SELECT keys.

When the PLAY/REPLAY key is pressed, the selected bar glows brighter, and all the bars before it go off. Play begins as soon as the laser pick-up reaches the track.

## Finding a Particular Passage (◀◀ SEARCH ▷▷)

During play, you can quickly locate a particular music passage in a track by pressing the ◀◀ SEARCH ▷▷ key. While you hold ◀ down, the laser pick-up runs back towards the beginning while you hold ▷ down, the laser pick-up runs towards the end. By using ◀ and ▷ alternately, you can find any part of any passage. When you release the key, play restarts at once.

During search, the laser pick-up moves at three successive speeds: for the first 3 seconds relatively slowly, for the next 3 seconds faster, and after approximately 6 seconds at maximum speed if you continue to hold down the key. The numbers of the time display run on at a corresponding rate; if you want to search using index numbers, you must press the PLAY/REPLAY key. When nearing the desired passage, it is advisable to release the key momentarily to go back to the lowest speed.

If, by pressing <L, you take the laser pick-up beyond the run-in of the first track, the ERROR indication lights and the laser pick-up stops at the beginning of the track. The disc continues to spin, however, so that play resumes when you release the key. If, by pressing >R, you take the laser pick-up beyond the run-out of the last track, the ERROR indication lights, and the laser pick-up runs back over the disc for about 20 seconds and remains at that point until you release the key. This is to prevent the disc stopping unexpectedly during search.

### **Holding Play at the Start of a Track or a Passage/Interrupting Play (PAUSE)**

You can stop the laser pick-up exactly at the start of a track or a passage by pressing the PAUSE key before pressing PLAY/REPLAY, NEXT >, <L PREVIOUS, <L SELECT > and PLAY/REPLAY or <L SEARCH >R. The PAUSE sign will light.

At the moment you want to start play, press PAUSE again. The PAUSE sign will go off.

For short play interruptions, you can also press the PAUSE key. The disc continues to spin, but the sound stops, and the PAUSE sign will light. If you press PAUSE again, the sound re-starts at the exact point where it was interrupted. The PAUSE sign will go off.

### **Repeating the Disc (REPEAT)**

If you want to hear the whole disc again, press the REPEAT key before play ends; the REPEAT sign will light. The bars for the finished tracks will not go off, and the disc will play continuously until you either press the REPEAT key again, or press the STOP key or the OPEN/CLOSE key.

In the first case the disc will play on to the end before stopping, in the other two cases play will stop at once; the REPEAT sign will go off.

### **Stopping Play (STOP or OPEN/CLOSE)**

To stop play before the end of the disc, you press the STOP key or the OPEN/CLOSE key. All the bars on the track indicator light again, while all the other indicators go off.

## **PROGRAMMING**

Besides the facility to use SCAN and STORE for auditioning, selecting and storing particular tracks, this Compact Disc player offers you many more programming facilities. Thus, you can decide the sequence in which you will hear the selected tracks, repeat a track more than once in a programme, and even play all the tracks on the disc in a different sequence.

To do this, it is necessary to store your choice in the memory of the player with the help of the SELECT and STORE keys. The memory has a capacity of 20 entries, which means that a maximum of 20 tracks can be stored. If you exceed the maximum of 20 tracks, the ERROR sign lights to remind you that the memory is full and cannot accept any more commands.

In principle, you can store the desired programme before loading the disc in the player, but then you run the risk of erroneously programming one or more higher track numbers than actually exist on the disc. Tracks with too high numbers are certainly erased from the memory when the programme starts to play - the ERROR sign lights at this stage - but the programme then contains fewer tracks than you expected.

We advise you, therefore, to place the disc in the tray and close it using the OPEN/CLOSE key, so that after the contents list has been read, the number of bars remaining lit on the track indicator corresponds to the number of tracks on the disc. The highest track number that can be stored is now determined and mistakes in this respect are therefore excluded. The total playing time displayed is not important during programming.

With the help of the contents list in the disc holder, decide on the tracks you want to include in the programme. For each track in

turn, start the corresponding track indicator bar flashing using either the SELECT > key or the <L SELECT key (depending on which will reach the bar quicker), then press the STORE key. If you go past the required bar, you can go back to it using the other SELECT key.

Do not allow more than 7 seconds to elapse between the time a bar starts to flash and the time the track is stored, otherwise the microprocessor in the player will assume that you have changed your mind. The bar then lights continuously again if you have not yet stored any other tracks, or goes off if you have. The track can then no longer be stored and the ERROR sign will therefore light if you now press the STORE key. However, you can re-activate the missed track again using a SELECT key.

**Example** - From a disc containing 14 tracks, you want to listen to tracks 7, 3, 9, 5, 12 and 10 in that order.

Load the disc in the tray and close it using the OPEN/CLOSE key. When the contents list has been read, 14 bars on the track indicator remain lit.

Now hold down the SELECT > key until bar 7 flashes, then press the STORE key. Bar 7 now lights continuously to show that this track is stored, bar 8 starts to flash, and the remaining bars go off. You continue by holding down the <L SELECT key until bar 3 flashes and then press the STORE key again. Bar 3 now lights continuously too, and bar 2 starts to flash.

You select and store the remaining tracks in turn by pressing SELECT > or <L SELECT, and then pressing STORE. The fact that during this process the bars of already stored tracks start to flash again has no effect on the programme.

As soon as the last track is stored, bars 3, 5, 7, 9, 10 and 12 are lit and bar 11 flashes. You can leave this last one to go off itself because you have finished programming.

If you notice, during or after programming, that you have stored a wrong track, you can rectify this by starting the corresponding bar flashing using a SELECT key and then pressing the CANCEL key. You can now store the correct track. To show that the wrong track has been erased, the bar goes off. Using our example: you have stored '4' instead of '5'. You go back to '4' using the SELECT > key and then press the CANCEL key. Bar 4 goes off and bar 5 begins to flash. You store this, the correct track, using the STORE key.

To erase the whole programme, press the STOP key.

During play of a stored programme, all player functions remain operative, except 'beginning at any specific track'.

You start play by pressing PLAY/REPLAY; the bar for the first track in the programme then glows brighter. The progress of play can be followed as the bar of each track played goes off in turn, while the bar of the next track glows brighter. You can see how many tracks remain at any time by the number of bars lit normally. During play of a programme you can still make alterations, such as adding or erasing tracks.

You go back to the beginning of a track by pressing PLAY/REPLAY.

If you want to go on to a next track of the programme, press NEXT >; should you do this during the last track, the ERROR sign lights and play of the last track will continue.

To go back to a previous track of the programme, you press <L PREVIOUS; should you do this during the first track, the ERROR sign lights and play of the first track will continue.

Searching for a particular passage using <L SEARCH >R is limited to the space between the beginning and end of the track being played; you cannot move the laser pick-up outside these limits to prevent arrival in another track, either programmed or not programmed, which would upset the programme. Arrival at either limit is indicated by lighting of the ERROR sign, upon which the laser pick-up stops until you release the key.

To hold play at the beginning of a track or a passage, or to interrupt the programme, press PAUSE.

If you want to repeat the programme, press the REPEAT key. The bars for all the stored tracks remain lit, and the one that is glowing brighter is the one for the track in play.

A programme is retained in the memory until the last track has been played. It is then erased whereupon all the bars on the track indicator light again and all other indicators go off. If you have pressed REPEAT, the programme remains in the memory until the repeat operation is finished.

If you press the STOP key or the OPEN/CLOSE key before the end of a programme, it is immediately erased.

## ADDITIONAL INFORMATION

### Listening with a Headphone (PHONES)

With a headphone connected to the PHONES socket, you can listen to discs without having to use an amplifier.

The headphone must have a 6.3 mm jack plug and an impedance between 8 and 1000 ohms.

You adjust the sound level with the VOL. control.

### Player Maintenance

The player mechanism is fitted with self-lubricating bearings, and must not be oiled or greased.

You can clean the cabinet, when necessary, with a chamois leather slightly moistened with water. Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.

The disc tray should be kept free of dust.

### Disc Maintenance

Although the music track in the disc is covered with a protective layer, it is still advisable to treat the disc carefully. As long as you always pick up discs by the edge, and put them back in their holders immediately after use, cleaning will not normally be necessary.

However, should fingerprints, dust or dirt appear, you can wipe them off with a soft, lint-free cloth. Wipe the disc in a straight line from centre to edge.

You can breathe on the disc first if necessary, but detergent or abrasive cleaning agents must never be used, nor must be cleaning agents for conventional records!

### IMPORTANT - Fitting a Mains plug (U.K. only)

The wires in the mains lead are coloured:

Blue - Neutral      Brown - Live

As these colours may not correspond with the colour markings identifying the terminals in your plug proceed as follows:

The Brown wire must be connected to the terminal which is marked with the letter L or coloured Red.

The Blue wire must be connected to the terminal which is marked with the letter N or coloured Black.

*Note:* This apparatus must be protected by a 3 amp fuse if a 13 amp plug is used, or, if any other type of plug is used, by a 5 amp fuse either in the plug, adapter, or at the distribution board. If in doubt consult a qualified electrician.

## Technical Data

### Typical Audio Performance

- Number of Channels: 2
- Frequency Range: 2-20,000 Hz
- Amplitude Linearity:  $\pm 0.02$  dB (20-20,000 Hz)
- Phase Linearity:  $\pm 0.5^\circ$  (20-20,000 Hz)
- Dynamic Range: 96 dB (20-20,000 Hz)
- Signal-to-Noise Ratio: 101 dB (20-20,000 Hz)
- Channel Separation: 100 dB (20-20,000 Hz)
- Total Harmonic Distortion: 0.0025% (20-20,000 Hz)
- Wow and Flutter: quartz crystal precision
- D/A Conversion: quadruple oversampling (176.4 kHz) with digital filter and two 16-bit D/A converters
- Error Correction System: Cross Interleaved Reed Solomon Code (CIRC)
- Audio Output Level: 2 V<sub>rms</sub>
- Impedance PHONES socket: 8-1000 ohms

### Optical Readout System

- Laser: semi-conductor AlGaAs
- Wave length: 800 nm

### Signal Format

- Sampling Frequency: 44.1 kHz
- Quantization: 16 bit linear/channel

### Power Supply

- Mains Voltage: see the type plate at the rear of the player
- Mains Frequencies: 50 and 60 Hz
- Power Consumption: 33 W approx.
- Safety Requirements: IEC

### Cabinet, general

- Material/finish: metal and polystyrene with decorative trim
- Dimensions (w × h × d): 420 × 90 × 300 mm
- Weight: 8 kg approx.

### Disc

- Diameter: 120 mm
- Thickness: 1.2 mm
- Direction of Rotation (seen from reading side): anti-clockwise
- Scanning Velocity: 1.2-1.4 m/s
- Rotation Speed: 500-200 rpm
- Playing Time (theoretical): 74 min (stereo)
- Track Pitch: 1.6  $\mu$ m
- Material: plastic

*The right is reserved to change data if necessary*

*This Compact Disc player complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.*

## FAULTS AND THEIR LIKELY CAUSES

Although the greatest care has been taken in the manufacture of this Compact Disc player, the possibility remains that a fault could appear or that for some reason the player fails to function to your complete satisfaction.

The cause, however, will certainly not always be found in the player itself. External factors, and the fact that it takes time to become accustomed to the whole concept of the new product and the new discs, can also play a role.

To save you unnecessary calls on your dealer or our Service Organisation, we have compiled a list of possible faults and their causes.

To even mention some of these causes, such as those to do with mains connection, may perhaps seem excessive. Our experience shows, however, that they are easily overlooked as sources of trouble.

If, by using this list, you do not succeed in solving the problem, stop your investigation. Disconnect the mains plug and contact your dealer. He will be able to advise you what to do next.

Under no circumstances should you open up the player; this will invalidate all rights under the guarantee.

### 1. After pressing the ON/OFF key, the track indicator does not light.

- The key was not pressed in far enough.
- The mains plug of the player is not properly plugged in.
- There is no supply at the mains socket. Plug in another electrical appliance and check if that works.

### 2. After pressing OPEN/CLOSE, the disc tray does not slide out.

- The player is not switched on. Check if the track indicator is lit.
- The microprocessor has not received the command correctly. Check if the tray opens if you first press STOP and then press OPEN/CLOSE again.
- The tray drive is not functioning. You cannot rectify this yourself. If a disc is in position, remove it by pulling the tray open carefully, then push the tray in to close it again.

### 3. After pressing OPEN/CLOSE, PLAY/REPLAY or SCAN, the disc tray does not slide in.

- The mains supply has been interrupted. Check if the track indicator is lit.
- The microprocessor has not received the command correctly. Check if the tray closes if you first press STOP and then press OPEN/CLOSE, PLAY/REPLAY or SCAN again.
- The tray drive is not functioning. You cannot rectify this yourself. If a disc is in position, remove it, then push the tray in carefully to close it.

### 4. After closing the tray the indication '00' goes off and stays off after a few seconds.

- The disc is not inserted with the label upwards or there is no disc in the tray and you have missed the ERROR DISC sign.
- The disc is dirty. See if cleaning the disc, or using another, clean disc, clears the fault.
- The disc is defective. Try another disc and see if that clears the fault.
- There is an unwanted object in the disc tray, e.g. a piece of paper or a remnant of packaging.
- The player is not horizontal.
- The transport screws have not been removed.

### 5. The disc is being played because the elapsed time indication steps on regularly, but there is no sound.

- The microprocessor has not received the command correctly. Check if pressing STOP and re-starting clears the fault.
- The (pre)amplifier is not switched on.
- The position of the (pre)amplifier source selector switch does not correspond with the input to which the player is connected.
- The (pre)amplifier or the (active) loudspeakers connected to it are not working. Check with another sound source to see if this is the case.
- The connection between the player and the (pre)amplifier is broken.
- The input to which the player is connected is defective. Check this by connecting the player to another input socket.

### 6. The sound is poor or distorted or you can hear only one channel.

- The disc is dirty or badly scratched. See if cleaning the disc or using another, clean or scratch-free, disc improves the situation.
- There is an unwanted object in the disc tray, e.g. a piece of paper or a remnant of packaging.
- The (pre)amplifier or the (active) loudspeakers connected to it are not working properly. Check with another sound source to see if this is the case.
- The player is not connected to the CD/TV, AUX, TUNER or TAPE IN input of the (pre)amplifier but to the PHONO input.
- One of the plugs of the connection cable is either not connected or not properly connected.
- The player is not horizontal.
- The transport screws have not been removed.

### 7. Programming is not working properly.

- The disc is dirty or badly scratched. See if cleaning the disc helps or try programming a scratch-free disc.
- The microprocessor has not processed the commands properly. Erase the programme by pressing STOP and store it again; re-start play and check if the fault has cleared.
- All 20 memory places are already occupied and you have missed the ERROR sign that shows this. Check this by storing an extra track and observing whether the ERROR sign lights.

### 8. The following faults can be caused by the same circumstances:

**Playback does not begin with the first track on the disc or of the programme, but with another track.**  
**Playback stops before the end of the disc or the programme.**

- The microprocessor has not processed the command correctly. Check if pressing STOP and re-starting clears the fault.
- The disc is dirty or badly scratched. See if cleaning the disc or using another, clean or scratch-free, disc clears the fault.
- The disc is defective. Try another disc and see if that clears the fault.
- There is an unwanted object in the disc tray, e.g. a piece of paper or a remnant of packaging.
- The player is not horizontal.

### 9. The player does not react to commands from the remote control handset.

- The batteries are low and the distance to the player was too great, or you did not aim accurately enough in the direction of the player.
- The batteries are flat.